Remarks

Support for the above-requested amendments to claim 1 is found at least at page 2, lines 1-2 and 6-7, page 3, lines 23-30, page 4, lines 4-6, and page 9, lines 1-5. It is submitted that this amendment places the application in condition for allowance, or alternatively, in better condition for appeal. Claims 5-13 were canceled in a previous Amendment. Claim 14 has been canceled without prejudice in this Amendment. Claims 16-25 have been withdrawn from consideration as being drawn to a non-elected invention. New claim 26 merely places a portion of the preamble language of claim 1 into an independent claim. Thus, it is respectfully submitted that no additional searching by the Examiner is required for new claim 26. No question of new matter arises and entry of the amendments and new claim is respectfully requested.

Claims 1-4, 15, and 26 are before the Examiner for consideration.

Species Election of Claims 16-25

The Examiner asserts that newly added claims 16-25 are directed to inventions that are independent and distinct from the invention originally claimed (and examined). In particular, the Examiner asserts that original claims 1-4 were directed to a binder slurry that comprises a polyvinyl acetate copolymer (species 1) and new claims 16-19 and 20-25 (*i.e.* species 2 and 3 respectively) are two distinct species that recite mutually exclusive characteristics that require separate fields of search. The Examiner states that because Applicants have received an action on the merits for the originally claimed invention, that invention has been constructively elected. As a result, claims 16-25 have been withdrawn from consideration.

In response, Applicants hereby elect species 1, claims 1-5 and 14-15, with traverse, and have withdrawn claims 16-25 from consideration.

Rejection under 35 U.S.C. §112, second paragraph

Claim 14 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. In particular, the Examiner asserts that it is unclear what additional limitation of the binder slurry is being claimed. Further, the Examiner asserts that if claim 1 were to be deemed allowable, claim 14 will be objected to as being a substantial duplicate thereof.

In response to this rejection, Applicants have canceled claim 14 without prejudice. Accordingly, Applicants respectfully request that this rejection be withdrawn.

Rejection Under 35 U.S.C. §103(a)

Claims 1-4 and 14-15 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,120,780 to Martino, *et al.* ("Martino") in view of Vinamul Technical Bulletin 1991 ("Vinamul"). The Examiner asserts that Martino discloses an aqueous composition that includes a polyvinyl acetate film former, an organosilane such as gamma-methacryloxypropyltriethoxy silane and 3-aminopropyltriethoxy silane, and surfactants. It is further asserted that acetic acid is used to adjust the pH to 5-6.5. The Examiner admits that Martino does not teach a polyvinyl acetate/silane copolymer.

In this regard, Vinamul is cited for disclosing RESYN® 25-1037, a vinyl acetate copolymer emulsion containing silane. It is asserted that Vinamul suggests using RESYN® 25-1037 as a forming size binder for glass roving because the silane group provides excellent adhesion to glass. The Examiner concludes that it would have been obvious for one of skill in the art to use a polyvinyl acetate/silane copolymer as the film former in Martino in view of the disclosure set forth in Vinamul.

Initially, Applicants submit that claim 14 has been canceled without prejudice, thereby rendering the rejection of this claim moot.

In response to the remainder of this rejection, Applicants respectfully direct the Examiner's attention to independent claim 1 and submit that claim 1 defines a binder that is not taught within Martino and Vinamul. Martino teaches an aqueous glass fiber sizing composition that contains a polyvinyl acetate film former and an organosilane lubricant. (*See, e.g.*, column 2, lines 41-44 and lines 60-61). The organosilane compounds used in the sizing composition may be prepared by reacting selected silane compounds with organo compounds having a long chain hydrocarbon group. (*See, e.g.*, column 2, lines 60-64). It is desired that the pH of the sizing composition range from about 2 to 7. (*See, e.g.*, column 6, lines 30-34). Other conventional glass forming size additives such as plasticizers, surfactants, emulsifiers, antistatic agents, and wetting agents may be included in the sizing composition. (*See, e.g.*, column 6, lines 35-38).

Vinamul discloses a vinyl acetate emulsion that contains silane (*i.e.*, RESYN® 1037) for glass fiber roving used in sheet molding compound (SMC) applications. Vinamul teaches

that the silane group provides excellent adhesion to glass. It is asserted that RESYN® 1037 films have very good resistance to softening from styrenated polyester resins. Additionally, Vinamul teaches that the solvent solubility is controlled at low levels to provide a stiff strand in SMC applications.

Applicants respectfully submit that Martino and Vinamul do not teach or suggest a binder slurry that includes a phenolic compatible silane and a polyvinyl acetate/silane copolymer where the phenolic compatible silane and the polyvinyl acetate/silane copolymer form a binder slurry for application to sized continuous fiber strands forming a continuous filament mat and where the binder slurry provides a compatible interface for phenolic resin systems. Martino teaches a size composition that is applied to glass fibers during the manufacture of the fibers. (*See, e.g.*, column 6, lines 53-61 of Martino). The present invention, however, is not a size composition, and is not applied to glass fibers. The claimed invention is a binder slurry for application to sized continuous glass strands forming a continuous filament mat. Further, the binder slurry of the present invention is designed to be compatible with the phenolic resin used in the mat-making process, not the glass fiber. In fact, the binder slurry does not come in direct contact with the glass fibers because of the sizing composition present on the glass fibers. There is simply no teaching or suggestion within Martino or Vinamul of a binder slurry for application to sized continuous fibers forming a continuous filament mat as claimed in claim 1. Moreover, Applicants surprisingly and unexpectedly discovered that the polyvinyl actate/silane copolymer film former provided a more compatible interface for phenolic resin systems. (*See* page 9, lines 2-5 of the present application). Accordingly, Applicants submit that claim 1 is non-obvious and patentable.

Additionally, it is respectfully submitted that the combination of Martino and Vinamul would not result in the presently claimed invention. As discussed above, Martino specifically teaches the application of the size composition to glass fibers. (*See, e.g.*, column 6, lines 51-61 of Martino). Vinamul teaches that the vinyl acetate copolymer emulsion provides excellent adhesion to glass. (*See,* line 3 of Vinamul). Vinamul does not teach or suggest a compatible adhesion of the RESYN® 1037 to a sizing composition or of forming a compatible interface with a phenolic resin as required by claim 1. Thus, Vinamul does not add to the teachings of Martino to achieve the presently claimed invention. It is submitted that if RESYN® 1037 was utilized in the size composition of Martino, it would be applied directly to glass fibers. Accordingly, Applicants respectfully submit that Martino and

Vinamul teach away from the binder slurry claimed in claim 1 in which the binder slurry is for application to sized continuous glass fibers forming a continuous strand mat and which provides a compatible interface with phenolic resins. Applicants respectfully submit that claim 1 is patentably distinct from Martino and Vinamul for these additional reasons.

In addition, Applicants submit that there is no motivation for one of skill in the art to arrive at the presently claimed invention based on the disclosures of Martino and/or Vinamul. In order to establish a *prima facie* case of obviousness, there must be some motivation, either within the reference or in the knowledge of those of skill in the art, to modify the reference or combine the references' teachings, there must be a reasonable expectation of success, and the prior art references must meet all of the claim limitations. (*See, e.g., Manual of Patent Examining Procedure*, Patent Publishing, LLC, Eighth Ed., Rev. 3, August 2005, §2142). It is respectfully submitted that one of ordinary skill in the art would not be motivated to arrive at the binder slurry claimed in claim 1 that includes (1) a phenolic compatible silane and (2) a polyvinyl acetate/silane copolymer where the phenolic compatible silane and the polyvinyl acetate/silane copolymer form a binder slurry for application to sized continuous fiber strands forming a continuous filament mat and where the binder slurry provides a compatible interface for phenolic resin systems based on the teachings of Martino and Vinamul because both Martino and Vinamul are silent as to any teaching or suggestion of a binder slurry for application to sized continuous fibers forming a continuous filament mat or of providing a compatible interface with phenolic resins. As a result, one of ordinary skill in the art would not be motivated to utilize a polyvinyl acetate/silane copolymer in a binder slurry for application to sized continuous glass fibers forming a continuous filament mat based on the teachings of Martino and/or Vinamul. Without some teaching or suggestion, there can be no motivation, and without motivation, there can be no *prima facie* case of obviousness.

In view of the above, it is respectfully submitted that independent claim 1 is not taught or suggested by Martino and Vinamul, either alone or in combination, and that claim 1 is therefore non-obvious and patentable. Because claims 2-4 and 15 are dependent upon claim 1, which is not taught or suggested by Martino and/or Vinamul as discussed above and because claims 2-4 and 15 are dependent upon independent claim 1 and contain the same elements as claim 1, it is submitted that dependent claims 2-4 and 15 are also not taught or suggested by Martino and/or Vinamul.

In light of the above, Applicants submit that claims 1-4 and 15 are non-obvious and patentable over Martino and Vinamul and respectfully request reconsideration and withdrawal of this rejection.

Rejection Under 35 U.S.C. §103(a)

Claim 4 has been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,120,780 to Martino, *et al.* ("Martino") in view of Vinamul Technical Bulletin (1991) and further in view of U.S. Patent No. 3,665,027 to Reichel ("Reichel"). The Examiner asserts that it would have been obvious to one of ordinary skill in the art to use gamma-aminopropyl trimethoxy silane in Martino's composition because (1) Martino teaches using an adhesion promoter and (2) Reichel teaches gamma-aminopropylalkoxysilanes as being useful as an adhesion promoter.

In response to this rejection, Applicants respectfully direct the Examiner's attention to the amendments made to independent claim 1 and submit that claim 1 defines a binder slurry that is not taught or suggested within Martino or Vinamul. Applicants submit that because Martino and Vinamul are discussed in detail above, the contents of Martino and Vinamul will not be discussed in detail with respect to this rejection for purposes of brevity.

Applicants respectfully submit that neither Martino nor Vinamul teach or suggest a binder that includes a phenolic compatible silane and a polyvinyl acetate/silane copolymer where the phenolic compatible silane and the polyvinyl acetate/silane copolymer form a binder slurry for application to sized continuous fiber strands forming a continuous filament mat and where the binder slurry provides a compatible interface for phenolic resin systems. There is simply no teaching or suggestion within Martino or Vinamul of a binder slurry for application to sized continuous fibers forming a continuous filament mat or of providing a compatible interface with phenolic resins as required by claim 1. In fact, Martino and Vinamul are silent as to any teaching or suggestion of a binder slurry for application to sized continuous fibers forming a continuous filament mat or of providing a compatible interface with phenolic resins. Additionally, Applicants respectfully submit that Reichel does not make up for the deficiencies of Martino or Vinamul, namely, the utilization of a phenolic compatible silane and polyvinyl acetate/silane copolymer to form a binder slurry for application to sized continuous glass strands in a continuous filament mat. It is respectfully submitted that the combination of the teachings of Martino, Vinamul, and Reichel would not

result in the inventive binder of claim 1. Accordingly, Applicants respectfully submit that claim 1 is non-obvious and patentable over Martino, Vinamul, and Reichel.

In view of the above, it is respectfully submitted that independent claim 1 is not taught or suggested by Martino, Vinamul, or Reichel, either alone or in combination, and that claim 1 is therefore non-obvious and patentable. Because claim 4 is dependent upon claim 1, which is not taught or suggested by Martino, Vinamul, and Reichel as discussed above and because claim 4 is dependent upon independent claim 1 and contains the same elements as claim 1, it is submitted that dependent claim 4 is also not taught or suggested by Martino and/or Vinamul and/or Reichel.

In light of the above, Applicants submit that claim 4 is non-obvious and patentable over Martino, Vinamul, and Reichel and respectfully request that this rejection be reconsidered and withdrawn.

Claim 26

Although not included in any of the outstanding rejections, Applicants wish to address the patentability of claim 26. It is respectfully submitted that none of Martino, Vinamul, or Reichel, alone or in any combination, teach or suggest a binder slurry compatible with a phenolic resin in a phenolic pultrusion process. Martino teaches the formation of a laminate by layering glass fibers sized with the disclosed sizing composition into a curing polyester resin. (*See, e.g.*, column 8, lines 5-10 of Martino). Vinamul teaches that the RESYN® 1037 emulsion is used for glass fiber roving in sheet molding compound applications. (*See* lines 1-2 of Vinamul). None of the cited references teach or even suggest a phenolic pultrusion process. Accordingly, Applicants respectfully submit that claim 26 is non-obvious and patentable.

Conclusion

In light of the above, Applicants believe that this application is now in condition for allowance and therefore request favorable consideration.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Application No.: 10/712,755
Attorney Docket No.: 25203B

If necessary, the Commissioner is hereby authorized to charge payment or credit any overpayment to Deposit Account No. 50-0568 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

Date: 8/28/07

Maria C. Gasaway
Registration No. 51,721

Owens Corning
Patent Department, Bldg. 21-0
2790 Columbus Road
Granville, Ohio 43023
(740) 321-7213